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SUBJECT: Application for amend to License DPR-74, extending interval to perform certain Tech Spec-required surveillances until Unit 2 refueling outage scheduled for 880610. Fee paid.

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AEP:NRC:0916AE

Donald C. Cook Nuclear Plant Unit 2
Docket No. 50-316
License No. DPR-74
SURVEILLANCE INTERVAL EXTENSION FOR UNIT 2 CYCLE 6

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Attn: T. E. Murley

October 28, 1987

Dear Dr. Murley:

This letter constitutes an application for amendment to the Technical Specifications (T/Ss) for the Donald C. Cook Nuclear Plant Unit 2. Specifically, we request an extension for certain surveillances which the T/Ss require to be performed beginning December 31, 1987. We are requesting relief from these T/S requirements until the Unit 2 refueling outage, which is currently scheduled for approximately June 10, 1988. Many of these surveillances can only be performed during shutdown; therefore, to avoid unnecessary shutdown of the plant, we ask that your review of this request be performed on an expedited basis and that you respond to us by December 26, 1987.

A description of the proposed changes and our analyses concerning significant hazards considerations are contained in Attachment 1 to this letter. The proposed revised T/S pages are contained in Attachment 2.

All of the requested surveillance extensions are associated with surveillances normally performed during refueling outages. The current refueling cycle has been lengthened due to a self-imposed limit of operation at 80% of rated thermal power and various unanticipated outages. The significant outages which have occurred during the current Unit 2 cycle are described below.

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Date of outage	Length of outage	Cause of outage
March 3 - April 21, 1987	49 days	Steam generator and ice condenser surveillance work
July 14-22, 1987	8 days	Problems experienced with main generator exciter
August 27 - October 11, 1987	45 days	Problems experienced with RCP hatch evaluations/steam generator eddy current testing

During the current Unit 2 steam generator inspection outage, an effort was made to perform as many surveillances as possible. Significant progress was made in reducing the number of T/Ss for which we need to request extensions. Our progress was constrained because Unit 1 was in a refueling outage at the same time. Therefore, other surveillances could not have been completed without significantly increasing the length of the Unit 2 outage.

This letter includes requests for extensions for surveillances which are due between December 31, 1987 and January 4, 1988. We are also requesting extensions for certain surveillances that are due after January 4, 1988 because these surveillances involve the same systems/equipment as the December 31 - January 4 surveillances. An additional letter requesting surveillance extensions from March 2, 1988 to the expected entry into the 1988 refueling outage will be sent under separate cover. We have broken up our request in this fashion because the T/S changes requested by this letter require the most immediate regulatory action in order to avoid unit shutdown.

If our request for extensions is not granted, we would be required to shut down D. C. Cook Unit 2 for a period of approximately 4 weeks beginning December 26, 1987 in order to perform those surveillances which are due by January 4, 1988. This outage would occur at the beginning of our winter peak power period. The loss of D. C. Cook Unit 2 would result in a loss of revenue to the American Electric Power system of approximately $4,770,000.00 during this four week period, a burden that would likely be placed on our customers.

Some of the Technical Specification pages affected by this submittal are pages for which changes are pending due to prior submittals. The proposed changes contained in this submittal are in addition to our previous requests and do not supersede them. The pages included in this category and the applicable prior submittals which have not yet been processed are provided in the table below.

Letter No.	Date	Technical Specification Page Nos.
AEP:NRC:0692AJ	May 30, 1986	3/4 7-6, 3/4 7-12, 3/4 7-13
AEP:NRC:0856-O	July 10, 1986	3/4 7-16a
AEP:NRC:0856T	July 16, 1987	3/4 3-47
AEP:NRC:0896G	Sept. 28, 1987	3/4 8-3, 3/4 8-5
AEP:NRC:0914C	Feb. 28, 1986	3/4 6-12
AEP:NRC:0959	May 28, 1987	3/4 7-19a

We believe that the proposed changes will not result in (1) a significant change in the types of effluents or a significant increase in the amount of any effluents that may be released offsite, or (2) a significant increase in individual or cumulative occupational radiation exposure.

These proposed changes have been reviewed by the Plant Nuclear Safety Review Committee (PNSRC) and will be reviewed by the Nuclear Safety and Design Review Committee (NSDRC) at their next regularly scheduled meeting.

In compliance with the requirements of 10 CFR 50.91(b)(1), copies of this letter and its attachments have been transmitted to Mr. R. C. Callen of the Michigan Public Service Commission and Mr. G. Bruchmann of the Michigan Department of Public Health.

Pursuant to 10 CFR 170.12(c), we have enclosed an application fee of $150.00 for the proposed amendments.

This document has been prepared following Corporate procedures which incorporate a reasonable set of controls to insure its accuracy and completeness prior to signature by the undersigned.

Sincerely,

M. P. Alexich
Vice President

cm

Attachments

cc: John E. Dolan
W. G. Smith, Jr. - Bridgman
G. Bruchmann
R. C. Callen
G. Charnoff
NRC Resident Inspector - Bridgman
A. B. Davis - Region III

Attachment 1 to AEP:NRC:0916AE

Reasons and 10 CFR 50.92 Significant Hazards
Evaluation for Changes to the Technical Specifications
for D. C. Cook Unit 2

As discussed in the cover letter, the purpose of this proposed amendment is to prevent an unscheduled surveillance outage before our next refueling outage currently scheduled to begin approximately June 10, 1988. This submittal requests extensions for surveillances that must be performed during shutdown or that present such operational difficulty that performing the surveillance is not practical at power. We propose to add the following Technical Specification (T/S) to Section 4.0 of the T/Ss.

4.0.7 By specific reference to this section, those surveillances which must be performed on or before July 1, 1988 and are designated as 18-month surveillances (or required as outage-related surveillances) may be delayed until the end of the Cycle 6-7 refueling outage (currently scheduled to begin during the latter part of the second quarter of 1988). For these specific surveillances under this section, the specified time intervals required by Specification 4.0.2 will be determined with the new initiation date established by the surveillance date during the Unit 2 1988 refueling outage.

We reference this Specification by footnote in all surveillances that require this extension. This footnote will be applicable to the following T/Ss with the indicated surveillance due date. Dates given include the grace period allowed by T/S 4.0.2.

	T/S Affected	Description of Change	Due Date
(1)	4.3.1.1.3 4.3.2.1.3	Delay time-response testing for reactor trip and engineered safety features instrumentation	12/31/87
(2)	4.5.1.d 4.5.2.e 4.6.2.1.c 4.6.3.1.2 4.7.3.1.b 4.7.4.1.b 4.7.5.1.e.2 4.7.6.1.d.3 4.9.4.b 4.6.2.2.c	Delay testing for equipment response to ESF signals (safety injection, containment pressure high-high, containment isolation phase A and B and purge exhaust	12/31/87
(3)	Table 4.3-10 Item 16	Delay Reactor Vessel Level Indication System Calibration	01/04/88

T/S Affected	Description of Change	Due Date
(4) Table 4.3-2 Item 6.d, 4.7.1.2.b	Delay auxiliary feedwater system testing including channel functional testing of loss of main feedwater pump signal	01/01/88
(5) 4.8.1.1.2.c 4.8.1.2 4.4.11.3 4.7.4.1.b	Delay diesel generator testing including relief valve testing and essential service water valve testing	03/18/88 (T/S 4.8.1.1.2.c.1) 01/01/88 all others

A description of the proposed changes, the reasons for the changes, and our analyses concerning significant hazards considerations for each group of extension requests are given in the remainder of this attachment.

(1) and (2) Reactor Trip and ESF Response Testing

We are requesting extensions for the time-response testing required by T/Ss 4.3.1.1.3 and 4.3.2.1.3 for the reactor trip and Engineered Safety Features (ESF) instrumentation in T/S Tables 3.3-1 and 3.3-3. In addition, we are requesting extensions for surveillance requirements involving equipment, which are listed below, and which actuates on an ESF signal. These surveillances in many cases involve the same equipment and are performed in part to satisfy the response time testing of T/Ss 4.3.1.1.3 and 4.3.2.1.3.

These additional surveillances, the affected components, and the respective ESF actuation signals are as follows:

	T/S	Components	ESF Signal
1)	4.5.1.d	accumulator isolation valves	SI
2)	4.5.2.e	ECCS automatic valves	SI
		centrifugal charging pump	SI
		safety injection pump	SI
		residual heat removal pump	SI
3)	4.6.2.1.c	containment spray automatic valves and pumps	containment pressure high-high
4)	4.6.2.2.c	spray additive system automatic valves	containment pressure high-high

	T/S	Components	ESF Signal
5)	4.6.3.1.2	containment isolation valves	Phase A isolation Phase B isolation
		containment purge and exhaust valves	containment purge and exhaust isolation
6)	4.7.3.1.b	component cooling water automatic valves	SI
7)	4.7.5.1.e.2	control room ventilation	SI
8)	4.7.6.1.d.3	ESF ventilation	containment pressure high-high
9)	4.9.4.b	containment purge and exhaust valves	containment purge and exhaust isolation

The extensions are required from December 31, 1987 until the Unit 2 refueling outage.

At the Cook Plant, response time testing is performed in several parts. The portion of circuitry from the transmitter to the master relay contact is tested separately from the portion from the master relay contact to equipment operation. Testing of the complete portion from the transmitter to the master relay contact (excluding the sensors) cannot be performed at power without violating the T/Ss or adversely impacting plant operation, i.e., trip. T/Ss 3.3.1.1, 3.3.2.1 and 3.0.3 require the plant to be shut down if sufficient reactor trip or ESF instrumentation is not operable. Both trains (all channels) of the function being tested must be taken out of service during this test because the same test signal goes into both trains, which generates a reactor trip signal. Should they not be in test, each signal would initiate protective functions such as safety injection and containment spray. Therefore, the portion of the time-response tests up to the master relay (excluding the sensors) must be done during shutdown. The balance of the equipment, i.e., from the master relay contact to equipment operation, is tested as part of the surveillances listed in the table above. Of these surveillances, Items 2 through 6 and 9 are specifically required by T/Ss to be performed during shutdown. Items 1, 7, and 8 are not specifically prohibited by T/Ss from being performed at power. However, to do this testing (as well as the other testing listed in the table) would require us to remove an entire train of safety equipment from operation (with the exception of the specific

equipment being tested). Because this removes a layer of protection built into the plant, and because it involves operating the plant in an abnormal configuration, it is not considered prudent to perform this testing at power.

The surveillance history of these ESF systems shows that since 1983 we have had no failures in meeting the T/S requirements due to equipment degradation. The failures that have been experienced have been with the limit switches that give indication of actuation to the control room and with improper wiring following maintenance. (The wiring problem was corrected before the system was placed in service.) These systems have not been found to be incapable of performing their safety function while in service. Additionally, we note that the ESF and reactor protection system channels are subjected to a T/S required surveillance program of channel checks and channel functional tests. All required channel checks and channel functional tests will continue to be performed. We believe these additional tests provide indication of the operability of the systems, and would provide indication of significant degradation. We therefore believe that the extensions we are requesting will not adversely impact the ability of this equipment to perform its safety function.

10 CFR 50.92 Criteria

Per 10 CFR 50.92, a proposed amendment will not involve a significant hazards consideration if the proposed amendment does not:

(1) involve a significant increase in the probability or consequences of an accident previously analyzed,

(2) create the possibility of a new or different kind of accident from any accident previously analyzed or evaluated, or

(3) involve a significant reduction in a margin of safety.

Our evaluation of the proposed change with respect to these criteria is provided below.

Criterion 1

Based on our review of past test data, and the fact that the equipment is subject to a surveillance program which includes channel checks and channel functional tests, we believe the proposed extensions will not involve a significant increase in the probability or consequences of a previously analyzed accident, nor will they involve a significant reduction in a margin of safety.

Criterion 2

The surveillance extension requested for the time response testing will not change the design or operation of the plant. Therefore we believe that this change will not create the possibility of a new or different kind of accident from any previously analyzed or evaluated.

Criterion 3

See Criterion 1, above.

Lastly, we note that the Commission has provided guidance concerning the determination of significant hazards by providing certain examples (48 FR 14870) of amendments considered not likely to involve significant hazards consideration. The sixth of these examples refers to changes which may result in some increase to the probability of occurrence or consequences of a previously analyzed accident, but the results of which are within limits established as acceptable. For the reasons detailed above, we believe this change falls within the scope of this example. Therefore, we believe this change does not involve significant hazards consideration as defined in 10 CFR 50.92.

(3) Reactor Vessel Level Indication System

An extension is requested for the channel calibration of the Reactor Vessel Level Indication System (RVLIS) required by T/S Table 4.3-10 Item 16. The required calibration cannot be performed at power because work must be performed in areas of the containment which are only accessible when the unit is shut down. The extension is needed from January 4, 1988 until the Unit 2 refueling outage.

Technical Specifications for RVLIS were issued for D. C. Cook Unit 2 as Amendment 92, on April 10, 1987. Thus, an extensive surveillance history for the system does not exist. Our review of the maintenance history of the system, however, gives us no reason to believe the system would be inoperable during the extension period. Additionally, indication of inadequate core cooling could be obtained by observing core exist thermocouple readings or by checking the subcooling margin monitor. These are the methods the operators would have used to assess inadequate core cooling prior to RVLIS operability. We also note that there are annunciators which indicate failure of RVLIS. Lastly, we note that T/S required channel checks are performed on RVLIS monthly, and will continue to be performed during the extension period. These channel checks would be expected to provide indication of the operability of the systems, and would provide indication of significant degradation. For these reasons, we believe that the extensions we are requesting will not adversely impact the ability of this equipment to perform its safety function.

10 CFR 50.92 Criteria

Per 10 CFR 50.92, a proposed amendment will not involve a significant hazards consideration if the proposed amendment does not:

(1) involve a significant increase in the probability or consequences of an accident previously analyzed,

(2) create the possibility of a new or different kind of accident from any accident previously analyzed or evaluated, or

(3) involve a significant reduction in a margin of safety.

Our evaluation of the proposed change with respect to these criteria is provide below.

Criterion 1

The equipment is subject to normal surveillances which would be expected to provide indication of significant degradation. Also, other instrumentation is available which also provides indication of

inadequate core cooling. Lastly, we have reviewed the past maintenance history of the equipment and find no reason to conclude that the equipment would be inoperable during the extension period. Therefore, we believe the proposed extension will not involve a significant increase in the probability or consequences of a previously analyzed accident, nor will it involve a significant reduction in a margin of safety.

Criterion 2

The surveillance extension requested will not change the design or operation of the plant. Therefore, we believe that this change will not create the possibility of a new or different kind of accident from any previously analyzed or evaluated.

Criterion 3

See Criterion 1, above.

Lastly, we note that the Commission has provided guidance concerning the determination of significant hazards by providing certain examples (48 FR 14870) of amendments considered not likely to involve significant hazards consideration. The sixth of these examples refers to changes which may result in some increase to the probability of occurrence or consequences of a previously analyzed accident, but the results of which are within limits established as acceptable. For the reasons detailed above, we believe this change falls within the scope of this example. Therefore, we believe this change does not involve significant hazards consideration as defined in 10 CFR 50.92.

(4) Auxiliary Feedwater Pump Testing

Extensions are necessary for the channel functional test of T/S Table 4.3-2 Item 6.d and for T/S 4.7.1.2.b from January 1, 1988 to the Unit 2 refueling outage.

T/S Table 4.3-2 Item 6.d requires a channel functional test of the motor driven auxiliary feedwater pump start on loss of main feedwater pump signal to be performed on an 18 month basis. To perform this testing during power operations would involve tripping at least one main feed pump, which would result in a reduction of power and cause a thermal transient to be imposed on the plant.

T/S 4.7.1.2.b requires testing to demonstrate that the motor- and turbine-driven auxiliary feedwater pumps start and that the associated automatic valves actuate to their correct position upon receipt of the appropriate signal as listed in T/S Table 4.3-2. Per T/S 4.7.1.2.b, this testing must be performed during shutdown.

Although we are requesting an extension of the surveillance requirement for these tests, in practice the essential portions of these T/Ss (that is, startup of the auxiliary feedwater pumps when required and movement of the valves to their correct position) have occurred several times since the last refueling outage. Portions of this system are actuated when the unit trips. The last such trip occurred on October 10, 1987. Prior testing experience with regard to these surveillances has indicated no significant problems when the surveillance was performed. Additionally, we note that the portion of the circuitry from the slave relay to the automatic valves and pumps was tested during the Unit 2 steam generator inspection outage which began August 27, 1987. This testing verified movement of the automatic valves and verified that the pumps would receive a start signal. Although we recognize that not all the actuation circuitry has been challenged as a result of spurious trips or the testing we just recently performed, we feel that our recent experience, in conjunction with the excellent test history in this area, justifies our request to extend the surveillance interval.

10 CFR 50.92 Criteria

Per 10 CFR 50.92, a proposed amendment will not involve a significant hazards consideration if the proposed amendment does not:

(1) involve a significant increase in the probability or consequences of an accident previously evaluated,

(2) create the possibility of a new or different kind of accident from any accident previously analyzed or evaluated, or

(3) involve a significant reduction in a margin of safety.

Our evaluation of the proposed change with respect to these criteria is provide below.

Criterion 1

As discussed above, portions of the system have undergone a challenge due to a recent actuation (that is, a unit trip). Additionally, recent testing has verified the operability of the circuitry from the slave relay to the equipment. These facts, coupled with our excellent test history for these surveillances, leads us to believe that extending the surveillance intervals will not involve a significant increase in the probability or consequences of a previously analyzed accident, nor will it involve a significant reduction in a margin of safety.

Criterion 2

The surveillance extensions will not result in a change in plant configuration or operation. We believe that the auxiliary feedwater system will serve its intended safety function if required, and that the extension we are requesting is not significant with regard to impact on public health and safety. Therefore, this change will not create the possibility of a new or different kind of accident from any previously analyzed or evaluated.

Criterion 3

See Criterion 1, above.

Lastly, we note that the Commission has provided guidance concerning the determination of significant hazards by providing certain examples (48 FR 14870) of amendments considered not likely to involve significant hazards consideration. The sixth of these examples refers to changes which may result in some increase to the probability or consequences of a previously evaluated accident, but the results of which are within limits established as acceptable. We believe this change falls within the scope of this example, for the reasons cited above. Thus, we believe this change does not involve significant hazards consideration as defined in 10 CFR 50.92.

(5) Diesel-Generator Testing

An extension of the surveillance interval is requested for the surveillance requirements of T/S 4.8.1.1.2.c. These surveillances are required by T/Ss to be performed during shutdown. The requirements include subjecting the diesel to an inspection in accordance with manufacturer's recommendations, as well as testing to verify that the diesel generator and its associated circuitry are capable of energizing, sequencing and shedding the emergency loads upon receipt of the appropriate signal. An extension of the surveillance interval is also necessary for part of the requirements of T/S 4.8.1.2, since T/S 4.8.1.1.2 is referenced there. Unlike the other equipment for which surveillance extensions are being requested, at least one diesel generator must be operable in Modes 5 and 6 per T/Ss. The plans for the 1988 refueling outage call for the entire core to be unloaded and placed in the spent fuel pool. We have determined that in this configuration, both diesel generators can be inoperable without violation of T/S requirements. Therefore, we need relief from the diesel generator surveillances listed above until the point during the outage when the core is unloaded. We anticipate this date to be approximately June 30, 1988. The diesel generator inspection (T/S 4.8.1.1.2.c.1) expires on March 18, 1988. The balance of the T/S 4.8.1.1.2.c surveillances expire January 1, 1988.

During the six month period from January 1 through June 30, 1988 each diesel generator would accumulate 6 additional starts and 6-8 additional running hours. The affect that these additional starts would have on the Diesel Generators is believed to be insignificant based on the wear history of each machine. Thus, we believe the additional starts do not constitute sufficient need to perform the subject surveillances prior to the proposed extended date. A review of diesel generator repair records from 1980 to present indicated no problem areas which, in our judgement, would be significantly affected by the proposed surveillance interval extension. Also, a review of previous test results did not indicate any reasons to suspect that the diesel generator associated circuitry (i.e., energizing, sequencing, and shedding the various emergency loads) would not pass required surveillance tests with the surveillance interval extended.

Two other extensions related to the diesel generators are also necessary to avoid a shutdown. These are for the requirements of T/Ss 4.4.11.3 and 4.7.4.1.b. T/S 4.4.11.3 requires testing of the emergency power supply for the power operated relief valves (PORVs) and their associated block valves. Since this testing involves cycling the PORVs and block valves, it is generally performed during

shutdown and in conjunction with the diesel generator testing requirements of T/S 4.8.1.1.2.c, as suggested by T/S 4.4.11.3. T/S 4.7.4.1.b involves testing automatic valves in the essential service water (ESW) system. Per T/Ss, this surveillance testing must be performed during shutdown. Since some of the ESW valves which are required to be tested involve cooling water for the diesel generator and its associated equipment, this testing is generally conducted in conjunction with the diesel generator testing of T/S 4.8.1.1.2.

The extension for both the ESW valves and the PORV emergency power supply are needed for the period January 1, 1988 to the Unit 2 refueling outage. Previous test results do not indicate any reason to suspect that the valves and their associated circuitry would not pass the required surveillance with the extended interval.

10 CFR 50.92 Criteria

Per 10 CFR 50.92, a proposed amendment will not involve a significant hazards consideration if the proposed amendment does not:

(1) involve a significant increase in the probability or consequences of an accident previously analyzed,

(2) create the possibility of a new or different kind of accident from any accident previously analyzed or evaluated, or

(3) involve a significant reduction in a margin of safety.

Our evaluation of the proposed change with respect to these criteria is provide below.

Criterion 1

For the diesel-generator machinery, the extension will result only in approximately 6 additional starts and 6 to 8 additional run hours. This is considered insignificant with regard to the wear history of each machine. For the diesel-associated circuitry, the ESW automatic valves, and the PORV emergency power supply, our review of previous test data has not indicated any reason to believe the equipment would not pass the required surveillance tests with the extended interval. Thus, it is our belief that these changes will not result in a significant increase in the probability or consequences of a previously evaluated accident, nor will they result in a significant reduction in a margin of safety.

Criterion 2

No new modes of plant operation, nor any changes to plant equipment will occur as a result of this change. Thus, we believe that these changes will not create the possibility of a new or different kind of accident from those previously analyzed or evaluated.

Criterion 3

See Criterion 1, above.

Lastly, we note that the Commission has provided guidance concerning the determination of significant hazards by providing certain examples (48 FR 14870) of amendments considered not likely to involve significant hazards consideration. The sixth of these examples refers to changes which may result in some increase to the probability of occurrence or consequences of a previously analyzed accident, but the results of which are clearly within the limits established as acceptable. We believe these changes fall within the scope of this example. Therefore we believe this change does not involve significant hazards consideration as defined in 10 CFR 50.92.